

S/TO

51

~~CONFIDENTIAL~~March 5th, 1959.ADDENDUM to
COCOM Document No. 3436BCOORDINATING COMMITTEE

4262524

A D D E N D U M T OMEMORANDUM BY THE BELGIAN DELEGATIONEXPORT OF TELEPHONE CABLES TO THE USSR

The Belgian Delegation wish to submit the following additional details on their exceptions requests contained in COCOM Document No. 3436.

The cable involved in this instance is intended to replace an existing overhead line, which has become unserviceable since the line has been equipped for traction with an alternative current of 25 kV and 50 Hz.

As a result of the magnetic induction due to the current running through the catenaries, the tension induced at 50 Hz in the overhead circuits becomes so high that all communication is impossible and even dangerous.

It is thus necessary to make use of cable circuits, since the protective action of the lead sheath and steel strips reduces the tension induced to the limits allowable. Three kinds of outer covering are provided for, depending on whether the cable will be laid in normal conditions, will be laid under a river or will be subjected to vibration.

The cable is composed of the following:

14 star quads (conductor diameter 1.2 mm.) insulated with dry paper having an effective capacity of 26 nF/Km and 5 signal wires (diameter 1.2 mm.) placed between the outer layer quads.

Of these 14 quads, 6 uncharged quads are used up to 150 kHz, 6 quads have their real and phantom circuits charged at 140/83 nH every 1.7 km and 2 quads are not charged.

In addition, a coefficient of reduction of the tension induced of 0.1 is required.

By its composition, this cable is of a type similar to the cables already in use on the Belgian and Luxembourg railways.

This cable is intended for traffic control, and for the transmission of signals and service orders normally necessary in operating a railway line.

The uncharged quads and the 5 wires are used for communications between stations for omnibus services, for code impulses, signalling etc.

The charged quads are normally used for dispatching purposes and for the transmission of certain signals.

Lastly, the quads used up to 150 kHz are needed to establish communications between central control services at the main junctions of the network.

~~CONFIDENTIAL~~

CONFIDENTIAL

- 2 -

ADDENDUM to
COCOM Document No. 3436B

Although operating up to 150 kHz, they do not afford a very high number of communications per circuit because, since there is only one cable, transmission has to be effected in both directions on the same circuit. The transmission bands are of 4 kHz. Transmission starts at 12 kHz, and the two transmission directions are separated by an unused band.

The number of communications per circuit night, in this case, be in the region of 12 to 15, which is far below the number of communications which can be transmitted by modern carrier-frequency cables, since the latter convey 120 communications per circuit or even more in certain instances.

In conclusion, this cable is not what is normally considered to be long-distance cable.

C O N F I D E N T I A L